

Operationalizing Trust: Building the Online Trust Student Survey (OTSS)

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ABSTRACT - This research study explores the creation of a survey instrument to explore the role “trust” plays in highly interactive, instructor-led online college courses offered by WashingtonOnline Virtual Campus (WAOL-VC). After an extensive review of the literature, a 47-item Online Trust Student Survey (OTSS) was created to operationalize the construct of “trust” based on online learner perception. This instrument explored “trust” relationships between learner and instructor; learner and fellow learners; learners and curriculum; learners and oversight organization; and learners and courseware technology. From this instrument, principal component variables were extracted for analysis. With a .922 score of the Kaiser-Meyer-Olkin Measure of Sampling Adequacy, the OTSS instrument offered strong ground for confidence coupled and with absence of multi-collinearity. In the first run, 630 current freshmen and sophomore students were surveyed. Post-survey online interviews were subsequently administered to investigate perceptions of learners in “low-trust” and “high-trust” categories. Additional interviews were conducted with distance learning (DL) or e-Learning instructors and administrators. The rigorous use of this instrument served as a test for its wide-ranging respondent accessibility and efficacy. The paper overviews the development of these instruments and offers insight into potential areas of further research.

Keywords: Online Trust Student Survey; OTSS; trust in online learning; distrust/mistrust; trust propensity; telepresence; peer-to-peer relations; online survey; Perennial Survey; post-survey online interviews.

Introduction

Survey design is an important aspect of academic research. Surveys should be developed based on theoretical grounding and a comprehensive review of the literature. All surveys should be prototyped, evaluated, and “dry-run” in real-world settings to improve confidence. Both quantitative and qualitative survey and interview tools can be used in combination to probe for fresh insights.

The Online Trust Student Survey (OTSS)

The report overviews the development of the Online Trust Student Survey (OTSS), a 47-item online instrument designed to survey online learners’ levels of trust in highly interactive instructor-led college-level courses. This instrument was created to determine how online learners experience “trust” in a disembodied online learning environment. The survey was designed to measure five trust relationships: 1) trust relationships between the learner and the instructor; 2) the learner and fellow learners; 3) the learner and the curriculum; 4) the learner and the oversight organizations, and 5) the learner and courseware technology.

Background

“Trust,” as a theoretical construct, is viewed as an essential part of human relations and cooperation. Trust facilitates the increased sharing of accurate information (Droege, Anderson and Bowler, 2003). While incoming learners may begin their studies with neutral trust or assumed minimal trust premised on expectations and/or prior experience, the formality of the online course structure (i.e.,

role behaviors, reputation of the institution, etc.) may, in fact, lead to intellectual risk-taking on the part of learners.

Without “trust,” academic life can wither. Students must trust instructors to treat them fairly and with respect, and not to dismiss their ideas as foolish or insignificant. Also, due to the inherent power differential, the relationship between instructor and student is a relationship of “trust.” Professors have power over students — over their grades and sometimes over their future careers or even over their sense of self-esteem and self-efficacy. Students have no choice but to “trust” that their professors will use their power judiciously and fairly (Hinman, 2002).

Respect is a pre-requisite for students to “risk” articulating and sharing their ideas (Hinman, 2002). Respect also means that professors must acknowledge individual learners as whole persons. According to Shaw (1997), “trust” is a prerequisite for students making changes that are inherently risky. According to Shaw (1997), “Trust among organizational members increases the likelihood of successful change. That is, trust increases the likelihood that people will abandon past practices in favor of new approaches. Trust is a resource, a form of ‘collaborative capital’ that can be used to great advantage” (p. 3). Drawing on earlier research, Williams (2001) asserts that “trust” is linked with greater organizational cooperation and lowered negotiation in organizations that depend on cross-functional teams/groups and inter-organizational partnerships.

Automated aspects of online learning environments, however, might discourage students to bestow their “trust.” Research shows that effectiveness of online learning de-

depends on "the amount, type, and quality of interaction between and among participants, particularly students and the instructor" (Hassenplug, 1998, p. 593). The quality of trust in interpersonal relationships is a central factor in determining effectiveness (Fairholm 1994).

With emphasis paid to community-building and relational support in online courses, "trust" is an important but often invisible feature. Models of distance/ Web-based learning underscore the importance of interrelationships between the learners and the instructor (Hinman, 2002). However, the virtual aspects of online learning may impede or preclude the building of "trust" between online participants. The absence of shared history, brevity of the semester, absence of non-verbal cues, and the lack of physical classroom within which to interact may lead to feelings of "distrust" among participants (Spiceland, 2002). The lack of a physical campus and four-walls could detract from instructors' credibility, simply because they lack physical accoutrements of an office, a framed degree hanging on the wall, stacked bookcases, face-to-face interaction with colleagues, professional attire, and other visible elements of instructor credibility. Citing earlier work, Spiceland (2002) reports that a regular college course has "unity of space, time, and sequential actions. A distance education class lacks all of these . . . and the most difficult hurdles to overcome in an online course involved the anxiety caused by the disunities of time, space and action, and the numerical superiority of student comments to those of the instructor" (p. 4). In addition, mobile learning aspects of distance courses might make the learning relationships seem all the more fleeting or superficial. This underscores the necessity of a thoroughly grounded "trust connection" which is in accordance with the tenets of constructivism (Jonassen, Peck and Wilson, 1998). Still, "trust" is viewed as a "key enabler" and a "foundation of support for high performance" (Shaw, 1997, p. 7).

All learning – whether in a classroom or online – takes place in a community. Rovai (2004) identifies critical elements of an online community: "mutual interdependence among members, connectedness, interactivity, overlapping histories among members, spirit, trust, common expectations, and shared values and beliefs" (p. 2). The lack of face-to-face interactions with others to affirm or disconfirm perceptions of the class/ instructor/ curriculum/ textbooks, etc., may lead to learner confusion. Instead, students typically build support networks by socializing, studying together, "hanging out," and doing library research. Online classes, however, often do not offer such easy, casual, and oftentimes serendipitous groupings.

The asynchronous nature of online learning detracts from the real-time, instantaneous, mutually-self-correcting nature of face-to-face communication. Some suggest that online learning may erode trust. "The limited social presence of computer-mediated communication encourages the mis-

interpretation of remarks, and the asynchronous nature of most conversations hinder the immediate repair of damages, stressing and even disrupting relationships" (Wellman, Salaff, Dimitrova, Garton, Gulia, and Haythornthwaite, 1996, p. 223 – 224). The feedback loop is typically asynchronous. Thus, misperceptions can linger and, in worse case scenarios, could evolve into full-blown disagreements, confrontations, and personality conflicts. "When people perceive communication to be ephemeral, the stakes of communication seem smaller. People feel less committed to what they say . . . less worried about the social reception they will get," (Palloff and Pratt, 1999, p. 34).

Disagreements, however, have been found to offer opportunity for online learners to recommit to collaboration. Palloff and Pratt (2003) wrote: "It can be uncomfortable to work through differences of opinion about how a course should progress and to define each student's needs in that regard, but doing so opens the door to collaboration. Collaboration is sustained throughout the course if dialogue, the critique of assignments, and collaborative work are encouraged. But it is the spirit of collaboration, not the tasks of collaboration, that sustains the learning community" (p. 24).

Rousseau, Sitkin, Burt, and Camerer (1998) found two preconditions must be present for "trust" to take root and grow: risk and interdependence. Risk is considered an essential precondition of "trust" in psychological, sociological, and economical conceptualizations. Here "risk" is the perceived probability of loss. Individuals' intentions are a source of potential risk. Rousseau and colleagues' second precondition is interdependence, meaning that the interest of one person cannot not be achieved without relying on another.

Molm, Takahashi and Peterson (2000) suggest that the relationship between a college instructor and student can evolve into power relations with "high exchange value" (p. 1407). Chan and Mauborgne (2003), on the other hand, argued that true intellectual risk-taking requires "trust" on the part of learners – trust that they will not be ridiculed, will be taught appropriately, will not be led to incorrect assumptions, and that they will be supported in their intellectual exploration. In short, "trust" has been found to be a key connector between students and their instructors. Because "trust" inspires and motivates learners to engage and contribute, "trust" is an essential building block underpinning student efficacy and learning (Chan and Mauborgne, 2003). Still, "risk" is inherent in online learning, a situation that can be further exacerbated by possibilities such as low grades and emotional harm if a given student's self-image is not positively reinforced during the learning process. Embarrassment and emotional rejection are very real hurdles to building "trust" in online learning contexts. As Schein (2004) suggests, two kinds of anxieties are involved in learning: learning anxiety and survival

anxiety (Coutu, Mar. 2002). Schein's opinions are echoed by Coutu (2004) who asserts:

Learning anxiety comes from being afraid to try something new for fear that it will be too difficult, that we will look stupid in the attempt, or that we will have to part from old habits that have worked for us in the past. Learning something new can cast us as the deviant in the groups we belong to. It can threaten our self-esteem and, in extreme cases, even our identity (p. 104).

Because elements of "risk" are involved when instructors seek to change their students' outlook and perceptions, the focus on building "trust" becomes necessary for any instructor attempting to teach (Fairholm, 1994).

The second condition of "trust," according to Rousseau and colleagues (1998), is "interdependence." Online classes often require group work. In such instances, "interdependence" between faculty and learners often emerge due to the collaborative and interdependent nature of online group activity.

Survey Research Questions

The five major research questions formed the basis and impetus of this survey:

- 1). How is trust manifested in an online classroom?
- 2). What do "high-trust online learning classrooms and communities" look like?
- 3). What factors contribute to "trust" or "mistrust?" How are these elements related?
- 4). How can trust as an asset be protected and leveraged in a virtual learning environment?
- 5). Is there a relationship between high-trust and the effectiveness of student online learning (as measured by the proxies of student retention/persistence, course grades, and student perceptions)?

Use of the Survey

Six hundred and thirty ($n = 630$) current freshmen and sophomore students were randomly selected and surveyed using the Online Trust Student Survey (OTSS).

A follow-up, purposefully selected sample of seventy-one ($n = 71$) respondents were then formally interviewed via email and telephone using a post-survey interview: 7 administrators; 41 online instructors; and 23 online learners. Of particular focus were learners who had scored high in their perception of a high-trust classroom (whose results were categorized as the high-trust learner group) vs. those who had scored low in their perception of trust (who were characterized in the low-trust learner group). All DL administrators in the system were queried, as were all the WAOL Virtual College instructors. Although the literature suggests that the use of email for such surveys risks low response (Watt, Simpson, McKillop, and Nunn, 2002), all but three interviews were conducted via email. Of the seventy-one respondents interviewed, three (one adminis-

trator, one faculty member, and one student respectively) requested telephone interviews. All interviews were completed as requested, with the exception of one student who could not be reached in time for inclusion in the data.

Method

The Online Trust Student Survey (OTSS)

The Online Trust Student Survey (OTSS) is a 47-item online survey developed to determine "how" learners experience "trust" in an online learning environment. Five "trust relationships" were identified and included: 1) trust between learners and instructors; 2) learner and fellow learners; 3) learners and curriculum; 4) learners and oversight organizations; and 5) learners and courseware technology.

The design underpinning this instrument originated with a thorough review of the literature examining the construct of "trust" in various fields such as distance learning and virtual teaming. The initial instrument was piloted using a group of distance learning DL administrators, DL faculty, and online learners. After testing for multi-collinearity and phrasing, the instrument was posted on the Internet through Perennial Survey. Its sampling adequacy was found to rank in the .90 range, which suggests strong grounds for confidence.

The instrument's internal reliability, internal consistency, and other aspects were also measured. During the pilot phase, factor analyses were conducted to confirm the researcher's hypotheses about instrument validity and reliability and to reduce the 47 variables. Signs of multi-collinearity were recorded. Multiple analyses of variance (MANOVAs) were run on the factors to determine if there were any notable features between the descriptive statistics of the respondents and component factors. A scree plot of eigenvalues was used to determine which variables could be eliminated in response to greater variance in the survey subjects' responses. Standard scores were used to show what learners ranked as important for their online trust (Norman and Streiner, 1999).

To address potential issues of multi-collinearity between the 47 variables, a Pearson Product Moment (PPM) Correlation procedure was conducted to determine if any of the items had a correlation of +0.70 or higher. Based on the PPM, the highest potential correlation was between the completeness of course materials and lectures (IM40ACompleteLectures) with the assigning of fair grades (IM39AFairGrades), with a moderate 689 Pearson Correlation. The second highest potential correlation was a moderate .616 between "IM40ACompleteLectures" and "IM37AClearWorkAssign."

Nine Elements of Focus

This instrument focused on nine core elements: 1) Individual trust propensities; 2) Communication; 3) Instructor characteristics and behaviors; 4) Organizational reputation; 5) Peer-to-peer relations; 6) Policy macro-structure; 7)

Student empowerment; 8) Curriculum; and 9) Technologies used.

A Dual Approach to Measure "Belief" and "Perception"

From these nine areas, 47 factors were established based on the research literature on trust and distance learning and subsequently measured twice using a seven point Likert-type scale. This dual approach allowed for both a measure of belief and a measure of perception. A 7-point Likert scale was used for more nuanced responses.

The first measurement was designed to establish how importantly learners perceived the construct of "trust" in online learning. The scale ran from 1 – 7, from "Highly Unimportant" to "Neutral" to "Highly Important."

The second measurement was designed to establish the level of agreement with the 47 factors as related to their own experiences in their then-current WAOL-VC courses. This scale ran from 1 – 7, from "Strongly Disagree" to "Neutral" to "Strongly Agree." The "do not know" opt-out option was created for all questions as well.

Limitations to the Creation of the Instrument

Limitations to the development of this instrument include the lack of a formalized inclusion of distance learner sampling in the building of the instrument and their inclusion only in the prototype testing after the initial build. It is also possible that other factors may have surfaced had direct learner feedback been solicited in a more formal way across a number of WAOL-VC courses.

Deployment Challenges

The deployment of this survey using online means may result in a lower respondent rate. However, in order to lessen the limitations, widespread sampling and other information-gathering methods (emailed interviews, direct phone call interviews at respondent request) were used. The broad-based online survey approach might suggest a model for measuring the level of trust in an online classroom, various theories of the manifestation of trust online, and its effect on student learning. Ideas on the relative value of trust (and in what manifestations) were collected as well. The grounded theories might address issues of "relevant predictions, explanations, interpretations and applications" (Glaser and Strauss, 1967, 1999, p. 1).

Application of the Literature and Initial Live Instructor, Learner, and Administrator Feedback:

Nine Core Areas of Focus

1. Trust Propensities

Trust propensity referred to the stable tendency of an individual to extend "trust" or to not extend their "trust" to others. Uslaner (2002) asserts that generalized trust reflects individual's and society's outlook on the world as a stable construct, with consistent "trusters" or "mis-trust-

ers." Citing the work of Barash (2003), Fairholm suggests that a person's proclivity towards trust or distrust changes the reality of their situation: "Whereas cooperative people experience both cooperative and competitive "partners," competitive people are likely to evoke competitiveness in others. There is a German saying that captures this: *Wie man hineinruft, so schallt es heraus* (How one shouts determines the echo.)" (p. 113). Trust, therefore, is an "inner mindset" that serves as a function of information, influence, and control (Fairholm, 1994).

Trust propensity has been linked to parental styles and attitudes as well. "Trust as a value sets in early in life. Trusting adults with nurturing parenting styles have trusting children . . . trusting young people, in turn, become trusting adults," wrote Uslaner (2000/ 2001, p. 574). Parents with higher education were found to raise more trusting offspring compared to those who grew up in harsh economic circumstances. Research also shows that individuals with religious affiliations tend to be more trusting, while those who have been impacted by divorce tend to develop negative trust relationships (King, 2002).

High "initial trust," however, has been linked to greater mitigations in the face of later disappointment. "Initial trust in an employer was negatively related to subsequent perceptions of psychological contract breach. Specifically, individuals with high initial trust were less likely to perceive the psychological contract had been breached compared with those with low initial trust . . . such that employees with low initial trust in their employer reported a greater decline in trust after perceived breach than employees with high initial trust" Kramer (1999).

Reina and Reina (1999) developed the Reina Trust and Betrayal Model used to evaluate the "trustworthiness of another." The authors found that "self-trust" had been linked with self-confidence – specifically one's ability to face ambiguity, practice self-efficacy, and assume risk. Individuals display a continuum of perspectives on the Reina Trust and Betrayal Model, ranging from a sense of "self-entitlement" on one end of the continuum, to "contribution to the world" on the other end. Those who subscribe to the "self-entitlement model" wait to receive "good" from others before they bestow trust. In contrast, those who believe in "contribution to the world model" view the world as a place of abundance and tend to bestow trust from the outset. "Because of their positive outlook . . . they attract more things to appreciate and trust in their relationships. These folks are like gardeners, cultivating their relationships and nurturing them with trust" wrote Reina and Reina (1999, p. 17).

Trust propensity appears to be operative until new information is learned through interaction. In this viewpoint, "trust" is a fairly stable belief construct based on one's early-life experiences. As situations become increasingly unfamiliar, however, (such as situations where students are engaging in online learning for the first time) the influence of the unfamiliar situation has on one's "trusting disposition" over their actual "behavior" grows. "Put another

way, as people become more acquainted with others, their personal knowledge of those others becomes the primary driver of their thoughts and actions" (Bigley and Pearce, 1998, p. 409).

2. Communication

Trust is manifest in communication between instructors/ learners, learners/ learners, and learner/ technology. The aggregation of "positive" interactions tend to reinforce relationships of mutual confidence, and each of these relational interactions in online learning are pieces needed to complete the entire trust puzzle. As Luhmann (1981) wrote: "Without communication there can be no human relations" (p. 122). However, with communication come polysemic interpretations of meaning and, by logic, the assumption of "risk." In short, interactivity/ communication cannot take place without risk, an insight that is articulated below by Peters (1999):

Communication is a risky adventure without guarantees. Any kind of effort to make linkage via signs is a gamble, on whatever scale it occurs. To the question, 'How can we know we have really communicated?' there is no ultimate answer besides a pragmatic one that our subsequent actions seem to act in some kind of concert. All talk is an act of faith predicated on the future's ability to bring forth the worlds called for. Meaning is an incomplete project, open-ended and subject to radical revision by later events (Peters, 1999, p. 267).

Research shows that the cumulative effect of numerous incremental "communication incidences" and "online experiences" must be realized before a "trust threshold" can be reached. In the absence of human interaction, however, "trust" in automated online environments can only be established after participants in the environment experience consistent service over time – i.e., delivery of good service by service providers (Balasubramanian, Konana, and Menon, 2003).

To engage learners and establish "trust," instructors should ideally design interactivity into online courses. Moore (1989) offers the following three types: 1) interaction between participants and learning materials; 2) interaction between participants and tutors/ experts; and 3) interaction among participants (Moore, 1989, p. 1 – 6). Such interaction allows the communication loop to be completed (i.e., the instructor's response) so that students perceive that the message is complete (Yacci, 2000, as cited by Northrup, 2001). Communication must also be mutually coherent and meaningful. Five attributes for interaction have been suggested: 1) interaction with content; 2) collaboration; 3) conversation; 4) intrapersonal interaction; and 5) performance support. In short, "all interactions should involve complex activity by learners to include engaging and reflecting, annotating, questioning, answering, pacing, elaborating, discussing, inquiring, problem-solving, linking, constructing, analyzing, evaluating, and synthesizing"

(Liaw and Huang, 2000, as cited by Northrup, 2001, p. 3 – 4).

The design of interactivity varies depending on the specific context of each course. According to Collins and Berge (1999), the overuse or misuse of interaction might lead to "boredom, overload, and frustration." According to Collins and Berge (1996), the design of a learning environment should foster "trust among learners and the instructor and seeks to promote a cooperative and collaborative environment, allowing students to learn from course materials, the instructor, and each other" (p. 5). The level of interactivity needed to support learning outcomes, and the frequency of communication, however, does not necessarily equal quality or fit with the content. "An instructor-centered approach . . . work[s] well for instruction that is procedural, declarative, or well-defined in role and definition . . . Student-centered learning is appropriate for outcomes of instruction that are focused on analysis, synthesis, and evaluation" (Berge, 1999, as cited by Northrup, 2001, p. 8). Northrup (2001) further suggests that if collaboration is required, arrangements to facilitate collaboration should be made early on, such as when alternative accommodations must be made for students, who given their circumstances, cannot participate fully. Trust was also found to influence interaction among familiar actors. Not only was trust found to facilitate cooperation among participants, but it played a critical role in the organization of economic transactions, from negotiations to team building (Bigley and Pearce, 1998).

3. Instructor Characteristics and Behaviors

Relationships between online learners and instructors are central to building "trust." Instructors should critically reflect on what they communicate to students online. Posted biographies (i.e., how unique they appear), weblogs, and other materials posted online, should be critically evaluated. Instructors should also reflect on their "telepresence." For instance, some researchers say that it is advisable to have an "outsider" attend an online class and describe the "realness" the instructor projects online. For instance, the outsider might suggest to the instructor that he should consciously convey his "work ethic" more clearly – both spoken and unspoken – via his online persona and behaviors (i.e., writing style, timeliness, follow-through, fairness in grading, following policies, etc.). Kasper-Fuehrer and Ashkanasy (2001) assert that a "Communication of Trustworthiness" underlies trust-building. Drawing on the research of others, Kasper-Fuehrer and Ashkanasy (2001) wrote: "We define Communication of Trustworthiness as an interactive process that affects, monitors, and guides members'" actions and attitudes in their interactions with one another, and that ultimately determines the level of trust that exists between them" (p. 237). Their finding is echoed by Metts and Grohskopf (2003) who assert that the art of "image management" should be applied in virtual space. "When skillfully performed, impression manage-

ment elicits favorable attributions that in turn promote satisfying interactions, social affiliation, and tangible rewards in the form of job success and promotion" (Metts and Grohskopf, 2003 p. 357).

4. Organizational Reputation

Without brick and mortar, virtual classrooms must draw on the "established reputations" of their oversight organizations. To build their public faces, distance learning programs have been capitalizing on the cachet of various organizations and their alliances with "name" instructors. One example is WashingtonOnline Virtual Campus (WAOL-VC), the focus of the survey reported here. Established reputations work to provide a certification authority – an entity that serves as "the anchor of "trust" between two previously unknown (to each other) identities in the electronic world" (Backhouse, Hsu, Tseng and Baptista, 2005, p. 88).

5. Peer-to-Peer Relations

Teaching online presents unique challenges. When computer-mediated communications replaces face-to-face communication, individuals are impacted in the following ways: "a) new possibilities for playing with identities become possible, b) gender cues are removed, and c) the subject is dispersed and dislocated in space and time" (Barnes, 2001, p. 235). Students' online personae are established through "avatars" and email "handles." Interactions are handled textually through sentences and through emoticons ("emotion" and "icons") such as smiley faces, frowning faces, and others most of the time. The online space feels invisible, insubstantial, and not quite real – particularly for learners new to online learning (Hassenplug, 1998).

Research by Cadieux (2002) found that a greater sense of community existed in face-to-face courses than online ones. "The study found that the face-to-face group experienced stronger feelings of spirit, trust, and interaction than the online group" wrote Cadieux (p. 1). Social cues – such as facial expressions, body language, tone of voice, joking, and personality – are often hard to discern online. Often there is no shared context between learners. Noting earlier research on the subject, Kramer (1999) wrote: "In the absence of personalized knowledge about others, or adequate grounds for conferring trust on them presumptively, trust within organizations must be either individually negotiated or substitutes for trust located" (p. 582). Indeed, it has been suggested that some individuals rely on a social decision heuristic, a behavioral convention one uses to make "decisions about how to respond to various kinds of choice dilemma situations they encounter" (Kramer, 1999, p. 582).

Online learners can feel socially isolated and, on occasion, distracted by other offerings available on the World Wide Web and Internet. They can also become disconnected from their instructor and other learners when they are separated by distance, time, personality, education, work, or financial background, or by values like religion and age.

Maeroff (2003) wrote: "People who can't be seen can't be trusted . . . Something of the honor system underpins on-line learning; wherever and whenever such an arrangement exists, critics suspect that someone waits for the chance to exploit it" (p. 172).

Without traditional social controls of authority, coupled with a new pedagogical focus on promoting self-direction and self-control, trust becomes more critical. "Although 'trust' is important in any kind of team, trust is pivotal in preventing geographical distance from leading to psychological distance in a global team" wrote Jarvenpaa, Knoll, and Leidner (1998, p. 30). The diversity of online participants, each with their own unique interests, might lead to mistrust. According to Nissenbaum (2003) "In such cases, we transact cautiously, ever on the lookout for betrayal, sometimes seeking protections from the most egregious harms, betrayals, and exploitation. So trust remains elusive" (p. 160).

Researchers identified other elements of online communication that might make electronic context-building difficult. Jarvenpaa and Leidner (1995; 1997) illustrate three challenges that face online participants: 1) lack of co-presence in time and space; 2) lack of the entire bandwidth (sight, hearing, smell, taste, and touch); and 3) lack of capacity for interruption, feedback, and learning. In a high-tech/ low-touch online culture, the lack of a human element can have an effect on the issue of trust and human relationships on psychological, social, and organizational levels.

6. Policy Macro-Structure

Critical aspects of the macro environment are defined by the policies and procedures used in conducting daily business. These involve procedural justice in dealing with academic dishonesty and having due process in place if the grading of student work is not achieved fairly. How individuals are treated is an important part of their own dignity. Students reported that instructor follow-through (i.e., terms upholding policies and practices) is very important in terms of the professionalism of the organization and ethics of individual instructors.

7. Student Empowerment

How much power do students "perceive" they have in the online class? According to Geis (1976) the concept of "student choice" is based on eight factors: 1) Pacing; 2) Reinforcers; 3) Contingencies; 4) Sequencing; 5) Mode; 6) Feedback; 7) Content and objectives; and 8) Discriminative control. (p. 258 – 262). But where does student power come from? Is it conferred? Is it earned? Does it come from the tuition payment? Is it an assumed inheritance? What is the student perception of this? And what is the instructor role in terms of this perception of power and power-sharing? Clearly these are important questions to ask. "The teacher-student relationship brings together two populations of unequal culture; yet there is no question of equality or informality in the relations between the two," (Boocock,

1973, p. 17). On the formal level there may be huge power disparities, a situation that may be enhanced or diminished by informal power roles.

Sometimes, formal roles take the place of personalized knowledge in building trust. As Kramer (1998) wrote:

Role-based trust represents an important form of presumptive trust found within organizations . . . role-based trust constitutes a form of depersonalized trust because it is predicated on knowledge that a person occupies a particular role in the organization rather than specific knowledge about the person's capabilities, dispositions, motives, and intentions. Roles can serve as proxies for personalized knowledge and other organizational members in several ways . . . strong expectations regarding technically competent role performance are typically aligned with roles in organizations, as well as expectations that role occupants will fulfill the fiduciary responsibilities and obligations associated with the roles they occupy. Thus, to the extent that people within an organization have confidence in the fact that role occupancy signals both an intent to fulfill such obligations and competence in carrying them out, individuals can adopt a sort of presumptive trust based upon knowledge of role relations, even in the absence of personalized knowledge or history of prior interaction (p. 578).

These observations also raise important questions: How is "power" shared in an online classroom from the students' points of view? From the instructor's point of view? How much decision-making power do learners have? Is such decision-making unfettered? If not, what are the boundaries to such decision-making? Is the decision-making participative, consultative, or authoritative? And where do they fall along the continuum? How does this student power translate into actual outcomes? Do students have a say about projects, grading, extra credit, policies, and other relevant aspects to student learning? Are there any aspects of "learned helplessness" in an online classroom? Or are students encouraged to be proactive?

The reward and punishment structure in a classroom may similarly affect the sense of trust among participants. So what are intrinsic and extrinsic rewards? What are the structural punishments for misbehavior? How are such sanctions manifested? What are the policy-based punishments? What can learners do to address situations of perceived unfairness? With any discussion of power, the issue of fair process must be raised. Chan and Mauborgne (2003) suggest that clarity is critical in establishing trust: "Who is responsible for what? To achieve fair process, it matters less what the new rules and policies are and more that they are clearly understood" (n.p.).

Avoiding onerous processes is one aspect of empowerment. In this context it is prudent to ask: Do learners go through unnecessary or onerous processes to make change or have their needs addressed? How does this affect their trust level? Are there "chain reactions" from procedures?

A cogent example is characterized by the words of one respondent: "At times, I was offended at the redundant postings to prove I had reviewed the reading. However, I knew there was no other way to confirm participation . . . The workload increase just to affirm trust becomes a hefty price for the convenience of online learning." (M. T., Survey Respondent, June 2003)

8. Curriculum

Trust between a student and the curriculum should be transferable. Students' academic work must not only be transferable to universities, but to real world contexts as well. "I think students need to believe that the curriculum is accurate, up-to-date, and comparable to what they would encounter in a face-to-face class at an accredited institution of higher learning in the state," wrote P. A. (Online instructor interview, March, 2005). One faculty member suggested that trust between a learner and curriculum was actually between that individual and the publishers of the course materials. "Trust is something that is relational – that is, it requires a relationship to be able to trust or distrust. It is possible for students to trust or distrust curriculum publishers because these are people with ideologies, but the curriculum is inanimate and neither worthy of nor capable of trust or distrust" (S. M., Online instructor interview, March 2005). Another respondent, C.R., observed a dynamic wherein one student started distrusting the curriculum: " . . . if the student feels the curriculum is inaccurate, outdated, not useful, boring, etc., then s/ he will have little trust in what s/ he is learning and the instructor. When distrust occurs at this level, students' questions become more pointed, often go after minor points, show less tolerance/ patience; work becomes inconsistent &/or late, participation markedly decreases, etc. It's important to take into consideration what students want/expect to learn & what the course requires; getting this cleared up in the first 1-2 weeks is essential" (Online instructor interview, March 2005). One faculty member suggested that the curriculum can be seen as a stand-in for the instructor. "If a student can see the curriculum and know that it is being followed weekly, the student can more easily trust the instructor on other issues" (M. G., Online instructor interview, April 2005).

Another instructor suggested that students need to believe in the expertise of the "course designer to deliver the goods" assuming they are aware of "such matters" in terms of the WAOL-VC method of course design (C.K., Online instructor interview, March 2005). Another wrote that the curriculum should be based on "current knowledge, practice, and pedagogy." (P. A., Online instructor interview, March 2005). Still another suggested that building "trust" relates to clear initial learner expectations and how those expectations are met (S. S., Online instructor interview, March 2005). Students should be able to question the "source and validity of the material presented," said L. G. "Without open discussions an error can be presented and most of the students will accept it as the truth. By having one

student raise some doubts and the others observe, they gain trust in the curriculum." To overcome this, L. G. let students know of potential changes that might affect what he was teaching, and he emphasized the importance of the instructor is follow-up on such changes (Online instructor interview, April 2005). In contrast, one respondent suggested that learner trust in the curriculum is not a relevant factor.

9. Technology

Earlier research found that the more experience individuals have with technology, the more favorably they rated distance learning. There must also be a strong perception of the usefulness of that technology in general and specifically for distance learning (Christensen, Anakwe, and Kessler, 2001). However, the instability of online courses (i.e., service outages) can negatively impact learners' perceptions of an online class as being unreliable. The online environment had been rife with concerns of network outages, attacks, intrusions, and malicious code (Austin and Darby, 2003).

Future trends point to increasing levels of technological savvy among distance learners and greater diversity of educational opportunities offered online. As such, it has been suggested that academic institutions and for-profit entities should collaborate on a wide range of technology (i.e., administrative systems; student support, degree granting and awards; course content; promotion and marketing; intellectual property, etc.) and establish standards for interoperability and quality control (Baer, 2000). Given online learning's "round-the-clock availability, at-home flexibility, self-pacing, cost-effectiveness, a broad reach, and increased opportunities for teamwork with those in remote locations" (McLester, 2002, p. 24), scalability is possible. The recent push for reusable learning objects and Shareable Content Object Reference Model (SCORM) standards may also serve online learners well.

Stages of Trust Development Investigated

Whether it is students' willingness to share intimate details, confide in each other, trust colleagues and teachers, voice their discomfort or opinions, engage in debate, and indicate their willingness to work with the same group again (Fairholm, 1994) – these are all attributes that underpin a positive online classroom experience.

Research has shown, however, that dissimilar group membership can waver between "trust" and "distrust" (Williams, 2001). Currall and Epstein's model of The Determinants of Trust, Decision to Trust, and Trusting Actions illustrate five factors that instill "trust": 1) benevolent intentions; 2) technical competence; 3) commitment to be trustworthy; 4) track record of trustworthiness; and 5) social influences. According to Currall and Epstein (2003) these are all factors that support students' decision to instill trust in others, and arrive at decisions that typically lead to trusting actions.

The presumption of "trust" can lead to beneficial and

cooperative behaviors. Unless faced with evidence to the contrary, trusting people tend to enter "trusting" relationships with the presumption that others can be trusted too. Because they form "trusting" associations from the outset, "trust" works to the trusting person's advantage, even though some element of "risk" is often involved (Molm, et al., 2000; Ross, Mirowsky and Pribesh, 2001).

"Distrust" has been studied less than "trust" in the literature. Researchers found that "distrust" was not the total absence of trust. Instead, "distrust" is located midway between "trust" on one end of the "trust continuum" and "mistrust" on the other (Baba, 1999; Lewicki, Mcallister, and Bies, 1998; Sitkin and Stickel, 1996). Distrust indicates an active behavior of another that threatens one's safety and security (Baba, 1999), a concept that is similar to that of Lewicki and colleagues' conceptualization of distrust that they define as "confident negative expectations regarding another's conduct" (Misiolek, Zakaria, and Zhang, 2002, p. 1397). Distrust is a multi-dimensional construct that is process-based, relational, and can reduce risk and uncertainty (Lewicki, et al., 1998; Luhmann, 1988; Sitkin and Stickel, 1996, as cited by Lewicki, et al., 1998). Distrust can be viewed as healthy. Lewicki and colleagues (1998) stated that "trust" and "distrust" coexist in "quasi-stationary equilibrium of force" that can "sustain trust or distrust at a specific level" (p. 445), a state that some have called "optimal trust." On the other hand, others have identified "distrust" as a temporary state (Barber, 1983). Some found that "distrust" reduces complexity by dictating a course of action based on suspicion, monitoring, and activation of safeguards (Walgenbach, 2001).

Semantic distinctions must be made between "distrust" and "mistrust" at this point. Mistrust is defined in the literature as a total "absence of faith in other people [that] represents a profound form of alienation that goes beyond a sense of separation from others to a suspicion of others" (Ross, Mirowsky and Pribesh, 2001, p. 568). Mistrust is the cognitive inclination of one to interpret the intentions and behavior of another as unsupportive, self-seeking, and dishonest. Those that are "mistrustful" believe all people are bad and cannot be trusted (Ross, Mirowsky and Pribesh, 2002). Little research has focused on the origins of mistrust, but weak social ties appear to be a factor. Ross, Mirowsky and Pribesh (2002) suggest that "mistrust" arises in situations of few resources (i.e., poverty) and high levels of structural disorder (i.e., abuse). Mistrust has been linked to "suboptimal interpersonal behavior and work performance" and to "psychological and physical ill health" (Omodei and McLennan, 2000, p. 280). Mistrust can also lead to an "orientation of hostility" (p. 280).

Online Technologies in the Trust Continuum

While online learning spaces often electronically monitor student behavior, the use of surveillance technologies might further decrease trust. Such technology can "undermine trust and may even elicit the very behaviors they are intended to suppress or eliminate" wrote Kramer (1999, p.

591). Phenomena that might lead to “distrust” include missing identities, missing personal characteristics, and inscrutable contexts. Such suspicion, however, was found to diminish over time (Nissenbaum, 2003).

Changing a low-trust environment into a high-trust environment presents serious challenges to educators. “Low-trust environments are extremely difficult to change. Distrust is typically self-sustaining and resistant to improvement (even in the face of positive information or events). Most efforts to address suspicion are perceived as inadequate. Those seeking to overcome high levels of distrust must take extreme measures – and realize that change will not occur quickly” (Shaw, 1997, p. 153).

Citing numerous scholars, Kramer (1999) wrote that trust is easier to destroy than create. “Trust-destroying” events are more visible than “trust-building” events, and tend to carry more psychological weight than trust-building events of similar magnitude (Kramer, 1999).

Post-Survey Online Learner Interview

Post-survey interviews sought to answer Research Question #4: “How can trust as an asset be protected and leveraged in a virtual learning environment?” DL students were divided into “high-trust” and “low-trust” categories, and asked the following qualitative questions:

1. What personality indicators do you use to know whether or not to “trust” an instructor?
2. How can an instructor come across as “real” in an online space? Please give some from-life examples.
3. Do you consciously build others’ (students’ and instructors’) trust in you when you participate in an online class? If so, how? If not, why not?
4. Have you ever felt like your trust was violated in an online class by an instructor? Please explain what happened. Please share as many experiences as possible.
5. Have you ever felt like your trust was violated in an online class by a fellow student? Please explain what happened. Please share as many experiences as possible.

The first question was designed to reveal the factors online learners used to determine whether or not to trust an instructor. This open-ended question allowed for a variety of cognitive, affective, and other approaches. The use of an emailed MS Word file allowed for as much elaboration as the respondents desired. To ascertain learners’ perception of instructor “realness” online, the second question focused on issues related to instructors’ telepresence. The third question aimed to determine whether students consciously instilled “trust” in their peers in terms of work habits, sharing of personal information, etc. The fourth asked respondents to share their experiences of trust violations by instructors. Question five asked respondents to share their experiences of trust violations by fellow students.

Post-Survey Online Instructor Interview

Descriptive information collected about faculty respondents determined how long they had been teaching online at the college level and subject taught. Permission was obtained to use/ not use their names. To encourage participation, no other information was collected.

1. Is trust an important factor in successful online learning? If so, how? If not, why not?
2. How important is trust between a college student and instructor in an online learning environment? Why? How do you see this trust manifested?
3. How important is trust between college students (peers) in an online learning environment? Why? How do you see this trust manifested?
4. How important is trust between student and curriculum in an online learning environment? Why? How do you see this trust manifested?
5. How important is trust between student and courseware technologies in an online learning environment? Why? How do you see this trust manifested?
6. Is there a certain time when trust “solidifies” in an online classroom? If so, when? If never, why?
7. What aspects of the online classroom contribute to building trust?
8. What aspects of the online classroom contribute to creating distrust?
9. In a case of mistrust, how can a class reestablish trust?

This follow-up interview with faculty was designed to capture their experiences of “trust” in online classrooms. This data was collected to offer comparison to learner experiences. Nine questions covered some of the same ground as the survey instrument, but with more open-ended questions to solicit a broader range of possibilities.

Post-Survey Distance Learning Administrator Interview

Descriptive information from administrative respondents included length of time working in distance learning at a college level, and annual number of students and faculty served in each program. They were also asked to identify their positions (i.e., deans, managing directors, DL coordinators). Permission was also obtained to use/ not use their names.

1. How do you influence how instructors teach in the program?
2. How do you influence the online curriculum?
3. How important is trust between a student and an instructor in an online learning environment? Why?
4. How important is trust between a student and other students in an online learning environment? Why?
5. How important is trust between a student and the curriculum in an online learning environment? Why?
6. How important is trust between a student and courseware technologies in an online learning environment? Why?

7. What aspects of leadership in administration contribute to learner trust?

The above questions aimed to determine how DL administrators perceive online trust in DL courses, and what aspects of their administrative leadership contributed to learner trust. Further, these qualitative interviews were designed to provide insight on how “trust” can be protected and leveraged in a virtual learning environment.

Findings and Further Research

The OTSS survey instrument – along with the follow-up interviews – revealed “trust” to be a complex and relevant phenomena influencing online learners’ experiences and learning outcomes. The OTSS, combined with the Post-Survey Interviews, surfaced insights about an online learning system’s efficacy. Findings reveal strategies for the development and evolution of instructor telepresence, online curriculum development, online instructional strategies, and the design of high-trust instructor-led online learning environments.

- Instrument development should be solidly grounded in a thorough reading of the research literature.
- It should involve feedback and input from those who are being surveyed. User feedback adds shimmers of richness and shadings of meaning that enhance the meanings *in* and *from* a survey.
- It should be trial-run for wording and tested for multicollinearity to increase the efficacy of the instrument. Appropriate revisions should then be made.
- It should be tested in the crucible of the real world of respondents, and in the testing, be measured further for reliability.
- A survey instrument should be enhanced by a multi-pronged approach to information gathering, which may involve both quantitative and qualitative approaches.

Further testing of the instrument in different cultural and learning contexts would enhance the instrument.

Future research on trust in online instructor-led environments should involve probes into the development of metrics and instruments designed to evaluate less visible aspects of the learning environment.

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APPENDIX A

Online Trust Student Survey

Directions: The results of this survey will be used for a dissertation on trust and online learning. Please fill this out as completely as possible. Your help will be critical to the success of this research. This survey will take about 20 minutes.

At the end, you'll be given the opportunity to submit an email address as part of a drawing for 10 \$50 Starbucks™ gift cards that will be mailed to any address in the U.S. Each student may only participate in this survey once.

1. What is your age group? (optional)

15 – 19 20 – 29 30 – 39 40 – 49 50 – 59 60 – 69 70 – 79 80+

2. What is your racial background? Multiple responses are available here. (optional)

African American/ Asian American/ Hispanic/ Native American/ Caucasian or White/ Other

3. What is your gender? (optional)

M/ F

4. Are you a freshman, sophomore, junior, or senior in college (in terms of numbers of credits earned)?

Freshman (first year)

Sophomore (second year)

Junior (third year)

Senior (fourth year)

Beyond (beyond the fourth year)

5. What is your current official cumulative grade point average (GPA) or cumulative grade in college? Mark the one that is closest to your cumulative grade.

GPA Scale Percentage Scale

3.5 - 4.0 = A (90% – 100%)

2.5 - 3.4 = B (80% – 89%)

1.5 - 2.4 = C (70% – 79%)

0.5 - 1.4 = D (60% – 69%)

0.0 - 0.4 = F (0% – 59%)

6. What are your motivations for taking the online course? Please mark all that apply. Mark them in the order of importance with 1 as the predominant factor, 2 as the second most predominant, etc.

1. Academic schedule

2. Commute

3. Family

4. Health

5. Work

6. Academic advisor suggestion

7. Convenience

8. Course reputation

9. Instructor reputation

10. Others: _____

7. How would you describe your general expectations when beginning an online course?

1. Skeptical

2. Negative

3. Neutral

4. Positive

5. Enthusiastic

8. Have you taken prior online courses?

0

1 - 5

6 - 10

11 - 15

16 - 20

21 or more

9. If applicable, were those online courses effective for your learning?

Effective

Ineffective

Mixed

10. How many online credits have you finished (will you finish) out of the amount attempted this quarter?

1 - 4

5 - 9

10 - 14

15 - 19

20 - 24

25 - 29

30 or more

11. If you are taking more than one online course, please choose just one and answer the questions below in response to that course only. How much background do you already have with this course subject matter in terms of prior high school and college coursework?

None

1 quarter

2 quarters

3 quarters (academic year or two semesters)

4 quarters

5 quarters

6 quarters (two academic years or four semesters)

7 quarters or more

13. How satisfied are you with this particular online class?

Very satisfied

Somewhat satisfied

Neutral

Somewhat dissatisfied

Highly dissatisfied

Main Survey

Directions: This survey will address issues of communication, instruction, your learning institutions, peer-to-peer relations, policy, curriculum, technology and academic outcomes. Please consider the statement made. Check the button that most closely indicates the level of importance of that statement to your online learning experience. Then, indicate your level of agreement with the statement as a learner.

Level of Importance to Online Learning

1 2 3 4 5 6 7 8

Highly un-important

Un-important

Somewhat un-important

Neutral

Somewhat important

Important

Highly important

Do not know

Level of Agreement with the Statement as a Learner

1 2 3 4 5 6 7 8

Strongly disagree

Disagree

Somewhat disagree

Neutral

Somewhat agree

Agree

Strongly agree

Do not know

Individual Propensities

1. I am self-motivated and responsible in my studies.
2. In general, I am a trusting person.
3. Taking a class is a risk to my sense of personal well-being.

Communication

4. I communicate with my online instructor outside of the online class, by phone, email, fax, instant messaging or face-to-face (any combination).
5. I communicate with my peers outside of the online class, by phone, email, fax, instant messaging or face-to-face (any combination).
6. The instructor regularly "attends" the online classroom and is often available to learners.
7. The instructor offers insights that are real-world and valuable outside the class context.
8. The instructor listens and responds appropriately online.
9. The instructor effectively sets boundaries for online student behaviors and communications.
10. The instructor demonstrates professional ethics.
11. Learners share critical comments such as blame, anger, and frustrations with each other.
12. The students in this online class participate sufficiently.
13. I express my personality fully in the online classroom.

Instructor

14. The instructor's professional credentials closely relate to what he/she teaches.
15. The instructor fulfills his/her expected and official role.
16. The instructor respects learner privacy by not posting private student information online.
17. The instructor offers extra-role behaviors such as letters of recommendation and off-campus learning opportunities such as internships, mentoring support or professional connections.
18. The instructor is enthusiastic about the class.

Organizations

19. I believe in WashingtonOnline's (WAOL's) professionalism.
20. I trust in my academic institution/college's integrity.
21. I consider the learning in my field of study to be valid.

Peer-to-Peer Relations

22. I expect to learn from my peers.
23. I have similar expressed values to those of my online peers.
24. I enjoy the feeling of anonymity from not meeting face-to-face with fellow students.
25. There is the right amount of (planned or unplanned) interactivity (conversations, shared projects) between online learners.
26. All members of the class are encouraged to participate.

Policy Macro-structure

27. Accessing an online classroom before the quarter begins is useful.
28. I value routine in an online class.
29. The classroom materials, instructor responses and grades are posted in a timely manner.
30. The academic advising I received about my online class was accurate.
31. The published policies and practices of the online classroom are followed by the instructor.

Student Empowerment

32. The teacher controls the messages posted by learners online.
33. Learners are encouraged to be proactive instead of passive.
34. Online learners are awarded grades for actual learning.
35. Online students have power to make changes in how the online class is taught.

Curriculum

36. There are sufficient examples of student work for reference.
37. The work assignments are well-presented and consistent.
38. The curriculum is appropriate for college-level studies.
39. The online grading is fair and clearly-explained.
40. The lectures and course materials are complete in addressing the subject matter.
41. The course materials are up-to-date.
42. The online digital simulations (if used) are real-world and accurate.
43. Cheating and plagiarism are not problems in my class.

44. If I have a learning problem, it is handled in an appropriate way.

Technology

45. The *Blackboard*TM courseware technologies are reliable.

46. In general, I trust computer technologies.

47. When I have a technology problem, it is handled in a timely manner.

Academic Outcomes

48. What grade do you expect from this course?

3.5 - 4.0 = A (90% - 100%)

2.5 - 3.4 = B (80% - 89%)

1.5 - 2.4 = C (70% - 79%)

0.5 - 1.4 = D (60% - 69%)

0.0 - 0.4 = F (0% - 59%)

49. Do you plan on taking online courses again through WashingtonOnline (WAOL)?

Yes

No

50. Mutual trust between participants in an online class

... exists from the beginning.

... develops in the middle of the course.

... develops at the conclusion of the course.

... never develops.

Potential Contact

If you would not mind being contacted for further information, please include a daytime telephone and an email address. Thanks for your insights and support.

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Authors Notes

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